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AUTHOR Reed, Jeffrey G.
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ABSTRACT

Relatively little is known about the information-seeking patterns of students using college libraries. In order to assess the bibliographic search process of students, a questionnaire and log form were given to 55 undergraduate students at Bucknell University's Bertrand Library. Forty-seven students completed the log and questionnaire. Each of the 39 usable responses was examined, evaluated, and rated on the basis of six rating scales concerning the statement of the research topic and the conduct of the search. A number of conclusions can be drawn from the information gathered. In general students seem poorly skilled in use of a college library. Instructions on how to use the library seem to have little effect. Students at Bucknell tend to search the card catalog most frequently by subject. Students seem unskilled in translating their questions into terms compatible with the library system. Students frequently fail to consult appropriate, key bibliographic information sources. Logical progression and systematic approaches to checking sources of information often appear to be absent. The conception of research on the part of many students appears to be limited and unsophisticated. (DC)

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INFORMATION-SEEKING BEHAVIOR OF COLLEGE STUDENTS USING THE LIBRARY TO DO RESEARCH

A PILOT STUDY

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Jeffrey G. Reed

Towson State College

1974

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Abstract

A preliminary investigation into "information-seeking behavior" of college library users, the present study tested a research instrument and gathered some sample data. The instrument consisted of a Questionnaire and a Log of Research Activities. It was distributed to 55 undergraduate students at Bucknell University's Bertrand Library. Forty-seven Subjects responded, and 39 of the responses were useable. Responses were examined, evaluated, and rated on the basis of six rating scales concerning statement of the research topic and conduct of the search. Relevant prior research was noted. Suggestions for modification of the instrument, and a need for further research in this area were noted.

INFORMATION-SEEKING BEHAVIOR OF COLLEGE STUDENTS USING THE LIBRARY TO DO RESEARCH

Jeffrey G. Reed [1]

Towson State College

College and university catalogs often speak in glowing terms of the campus library as the "heart of the college" or the "hub of the campus," yet, how much is known about that "heart" by members of the academic community—library staff included?

How do people use a library? What do they do when involved in bibliographic research? How do they think about their research? What procedures and logical sequences do they follow in searching for information and checking possible information sources? Librarians seem to have many clues to the answer of those questions, but how much hard information is really available?

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1. The author is currently a graduate student in the Department of Psychology, and research assistant to the Associate Dean of Academic Affairs at Towson State College. The present study was originally conducted while the author was Assistant Reference Librarian at Bucknell University. The author wishes to thank Dr. Joseph Juhasz, formerly of the Bucknell University Psychology faculty; Ms. Linda Frederick, Ms. Laura Fulton, and Ms. Eleanore Hofstetter at Towson State College, for their comments and suggestions.

A reference librarian is able to observe numerous students attempting to make use of a library. Behavior patterns appear to vary widely. Using a library effectively--one becomes convinced--is both a skill and an art which requires time and effort to learn. Unfortunately, many students seem to lack the opportunity and inclination to attend to that learning, or the inquisitiveness and natural ability to make sense of the system on their own. Some students request assistance from a librarian when an impasse is reached. However, too often, the student appears to assume that he or she knows how to use the library and needs no assistance, and failing to find information, the student condemns the library.

It is assumed in many disciplines that students do not intuitively know how to conduct research properly. Rather, students must be taught how to conduct research. It seems inconsistent that so many of those who insist on "proper instruction" in their own disciplines fail to consider the necessity of training students in the means to obtaining information in a library, a complex information storage and retrieval system.

Not only is little known about "information-seeking behavior" of Bucknell students, but little has been reported in the literature regarding information-seeking behavior of students elsewhere.

With several exceptions, reports appearing even remotely relevant to the present problem have similar characteristics. Those studies used a questionnaire, generally mailed, to a sample of Subjects who it was assumed had done research during a preceeding specified period

of time. Subjects were asked to respond to questions in two general categories: (a) the types of source materials they had consulted, e.g. research reports, published literature, conference proceeedings, etc.; and (b) how knowledge of source materials was obtained, e.g. word-of-mouth, printed abstracts/indexes, review articles, etc.. From that information conclusions have been drawn regarding research methodology. A study sampling 2,600 subjects (Bath University of Technology, 1971) used this procedure to arrive at conclusions regarding types of information and sources used by faculty members and researchers in Britain. A similar study in the United States (Johns Hopkins University, 1963) on a smaller scale produced similar data and results. Over the past twenty years, the general area of information sources and this general approach have proven an appropriate subject for M. A. theses in Library Science, as evidenced by their frequent citation in Library Literature. Stinson's (1966) thesis is an interesting example.

The deficiencies of this type of research are numerous and most may be grouped into the following areas: (a) failure to report useful sources; (b) failure to report sources consulted but unproductive; (c) reporting of sources which may have been unproductive, without that indication; and (d) failure to deal with such critical problems as research processes, search procedures and strategies, and search logic.

One of the first major attempts at a behavioral assessment of the problem was the American Library Association's (1958) study of catalog

use, the results of which seem to have been generally ignored in practice by the library community. However, it is of limited applicability to the present problem. A review of the Atkin (1971) and Bates (1971) bibliographies on use studies and user studies revealed little additional relevant information.

Davis (1971) surveyed approahces to library use and determined that most general use studies "fall into two categories: (1) compilations of circulation statistics, and (2) analyses of reference questions." Of more contemporary scientific measurement proceudres, she reported use of the following: questionnaires, interviews, observations, diaries, and critical incident studies, the most favourable of which was a combination of the questionnaire and interview.

Perrine (1967), in the first significant report which actually dealt with behavior since the 1958 study, attempted to assess card catalog use in terms of "difficulties with using the card catalog which were referred to a reference librarian" at one of 12 libraries. Although some 300 completed interview reports were received by the experimenter from 11 libraries over the 3 month experimentation period, there appear to have been serious methodological problems.

Tagliacozza and Kochen (1970) used 2,681 interviewing/observation sessions at the University of Michigan Libraries and the Ann Arbor Public Library in investigating trends in search strategies and degree of perseverance in the use of the libraries' card catalogs. Each interviewing/observation session covered a single catalog search with a single subject. It was found that the card catalogs were used primarily

for known-item searches, and secondarily for subject searches, with the ratio being about three-to-one. There was a relationship between the academic rank of the user and the type of catalog search performed--as the level of education rose, the tendency was to rely increasingly on known-item searches. It was found that most users preferred to use the author's name, even when they had better information about the title; and it was concluded that many catalog users are unwilling to learn the catalog conventions and filing rules, and thus feel safer in searching the catalog with the author's name. Furthermore, Tagliacozzo and Kochen found that perseverance of searchers seeking a specific document is not high--more than half of the Subjects who failed to find their book on the first attempt terminated their search.

Seymour and Schofield (1973) in another catalog study, with the Library Management Research Unit at Cambridge University, tested a survey design in four libraries--Cambridge University, Leicester University, London University Institute of Education, and Bradford University Social Science--in an effort to measure author catalog use. The study combined interview and questionnaire techniques to (a) discover "the size of the 'catalog failure' problem and the various reasons for it" and (b) develop a "simple system for conveying this information to the librarians." 1,271 Subjects were interviewed, and over 5,000 catalog failures were reported. One of the most significant aspects of the study was the development and testing of "Catalog Query Slips" which represent a quick easy device for a user's report to the

librarians of catalog failure.

Lipetz (1972) reported use of the main catalog in the Sterling Library at Yale University. Over 2,000 interviews were conducted with catalog users in that study. Conducted because of a concern for future computerization efforts relating to large library card catalogs, of which Yale's is one, and ways to improve the existing conventional card catalog, the study found that 73% of the users conducted "document searches" for a specific item, and that the rate of success for those searches was 84%. Heaviest use of the catalog was by graduate students.

There are a number of reasons for studying "information-seeking behavior" of library users in its broader context.

(a) An understanding of the processes and procedures used is essential for assessment of potential instruction programs, in terms of methods of instruction, content of instruction, depth of instruction, etc., which should be available to users and potential users.

(b) This information is essential, with the increasing impact of information science and computer technology, and the information explosion, for the design of information systems which function either in a logical, readily apparent fashion, easily understood by library users; or which may be rapidly learned by library users through appropriate instruction.

(c) From available evidence, many decisions reached in libraries appear to be made in an empirical vacuum. Too often librarians rely on what <u>seems</u> logical, what is standardized procedure, what will conform to the practices of other libraries, or what is <u>thought</u> to be typical

patron behavior--without the hard evidence to support those assumptions and validate those decisions.

The present study has only begun to scratch the surface of the problem of "information-seeking behavior" of library users, and was intended to serve two purposes: (a) to gather a sampling of information on behavioral patterns of college students conducting bibliographic research at a particular university; and (b) to test an instrument for gathering such information.

Several trends were expected to appear in the data collected: (a) students would be found to be unskilled in use of the library; (b) students would tend not to search beyond the card catalog in many instances; (c) many students would fail to make the fullest possible use of the card catalog--missing some appropriate entries, using inappropriate approaches and terms; (d) many students who proceeded beyond the card catalog would consult only the most basic, simple, and at times irrelevant sources; (e) many students would exhibit illogical or sporadic approaches to bibliographic searching; and (f) a few students would exhibit a significant command of their subject, a logical search pattern, and consultation of appropriate, useful bibliographic sources.

Method

The present study was intended as a preliminary investigation. A field observation technique was utilized, involving a self report instrument composed of a Questionnaire and a Log. The research was conducted at the Ellen Clarke Bertrand Library, Bucknell University.

The Questionnaire was designed to elicit basic demographic information from each Subject, and to identify each Subject's research topic, as indicated in Figure 1.

Insert Figure 1 about here

The Log, presented in Figure 2, was designed to elicit information on each Subject's procedure and behavior during the course of bibliographic searching.

Insert Figure 2 about here

Sample Log Entries were provided to each Subject to illustrate the types of information desired by the Experimenter, as indicated in Figure 3.

Insert Figure 3 about here

Subjects were Bucknell University undergraduate students, selected during three peak library use times, two weeks prior to the end of the fall semester in December 1972. Sample one was made on a Thursday evening, sample two on a Saturday afternoon, and sample three on a Sunday afternoon. Subjects were selected semi-randomly as they entered the library, Thursday, every second user entering the library was interviewed; Saturday, every third user was interviewed; and Sunday, every fifth user was interviewed.

A standard Interview was conducted with each potential Subject, to ascertain first whether he/she was at the library to do bibliographic research, and then whether he/she was willing to participate.

Ratings were made of each Subject's responses, using a series of six rating scales designed for that purpose. The first three rating scales (A, B, & C) assessed each Subject's statement of the research problem, while the second three rating scales (D, E, & F) categorized the behavior of the Subject on the basis of the report of the performance of the bibliographic search. The rating scales used were as follows:

Rating A, Understanding. The respondent's statement of the research topic evidenced:

1. little understanding or comprehension of the subject or topic.
3. an adequate understanding of the subject and topic.
5. a thorough understanding of the subject and topic.

Rating B, Precision. As stated by the respondent, the topic was defined:

1. vaguely or unclearly.
3. fairly clearly.
5. precisely, specifically, and exactingly.

Rating C, Generality. The respondent's topic as defined was:

1. broad, general, and rather global.
3. defined showing some limitations.
5. a narrow, restricted, particular topic.

Rating D, Beginning. The origin of the search, from the standpoint of a source likely to produce relevant information, or offer the searcher viable leads and alternatives, was:

1. unproductive.
2. of limited usefulness.
3. adequate.
4. a very useful beginning.
5. an extremely profitable beginning.

Rating E, Logic. The respondent's search progressed:

1. sporadically, discontinuously, and illogically, if at all.
2. showing little direction.
3. with some direction.
4. with considerable continuity and direction.
5. in a very goal directed, logically advancing sequence.

Rating F; Fruitfulness. Sources consulted by the respondent, in researching the topic were:

1. largely irrelevant.
2. of some relevancy (peripheral bibliographic materials).
3. generally relevant.
4. of primary relevancy (including at least one primary source, or a minimum of two secondary, related sources).
5. extremely relevant (including at least the most important, key source, or a minimum of two primary sources.)

Data analyses were performed using Chi Square (x^2) tests, and Contingency coefficients (C) (Siegel, 1956).

Results

Questionnaires and Logs were distributed to 55 willing Subjects. Five persons interviewed declined to participate and were not given questionnaires. Forty-seven sets of Questionnaires and Logs were returned to the experimenter -- an 85% return rate. Of those returned only 39 responses contained sufficient information to be used -- 83% of the responses, 71% of those Subjects who agreed to participate -- the remaining eight contained no information, contained illegible or uninterpretable information, or they had misunderstood the task and had already completed their research.

The sample consisted of 23 males and 16 females -- consistent with the Bucknell male/female student ratio -- of whom 14 were freshman, 7 sophomores, 12 juniors, and 7 seniors.

Academic majors of the subjects represented all divisions of the University, with the largest number of majors in psychology (8), the next largest in education and engineering (6 each), followed by biology (5), English (3), economics and political science (2 each), and other departments.

Of the 39 Subjects, 28 reported having received instruction in use of a library (72%), with the greatest proportion of that instruction at the high school level -- 22 Subjects, 79%. In the estimation of a number of Subjects that instruction had been sketchy and largely incomplete, as indicated by such comments as: "very limited," "very brief," "one hour lecture," "one day in high school," etc.. Only 3 Subjects reported having received library instruction in college.

Statements of the Subjects' research topics were categorized by academic discipline, and the bulk of the research was in the social sciences and the humanities. Eight searches were done each in literature and in psychology (each 20.5% of the sample), five in economics (13% of the sample), four in political science (10%), three in education (8%), two each in linguistics, history, biology, and engineering, and one or less in other disciplines.

Sources consulted were tallied, and the most frequently used bibliographic source was the subject section of the library's divided card catelog, used by 18 Subjects (46% of the sample). This was followed in frequency by use of Psychological Abstracts by 7 Subjects (18%), the Reader's Guide to Periodical Literature, by 6 Subjects (15%), and additional sources as noted in Table 1.

Insert Table 1 about here

Subjects frequently failed to consult critical, key bibliographic sources. Twenty-two Subjects (56% of the sample) failed to check the most prominent periodical source for their particular topic. Among those available, relevant sources not consulted by any subjects were the following: Bibliography Index, Essay and General Literature Index, Monthly Catalog, Social Sciences and Humanities Index, New York Times Index, and other sources listed in Table 2.

Insert Table 2 about here

Only one Subject consulted the M.L.A. Bibliography. No one asked a reference librarian for assistance -- there was a different professional librarian at the reference desk during each of the three sampling periods. And, no one consulted a specialized bibliography in book or periodical form.

Search problems. Of those who began with use of the library's card catelog, a number evidenced problems with that tool, as in the following case: Subject 5, a freshman, female, chemical engineering major, who reported having received enough instruction in use of a library "to use any library," was searching for "information on King Arthur and Sir Thomas Malory." She consulted only the subject section of the card catalog under Malory, and was "disgusted" when none of the three books she wanted was available. Ignored were all other possible entry points to the catalog, and all non-book materials.

Four additional cases of poorly rated searches might serve to clarify any questions about the application of the rating scales, and offer examples of results.

Subject 6, a sophomore, male, Biology major, who had received instruction in use of the library in high school, was researching "military spending (military industrial complex). What is it and what part it plays in our American Economy." He went directly to the card catalog, found one book, Capitalism -- The Political Economy of War, checked it out and left the library.

Subject 18, a freshman, male, pre-medicine major, who had received library instruction at various points during junior high school and high school, was searching for information on the "river metaphor

in Huckleberry Finn." He checked only the card catalog under the author Clemens, ignoring all subject entries, as well as periodical sources.

Subject 26, a freshman, male, Biology major, who had not received instruction in library use, was "doing research on the poetry of John Donne; specifically, Satire III." He was looking for "insight into the poet himself so I can make a more intelligent poem analysis. I hope to use information on his life style to help me figure out the 'how and why' of his poetry." He consulted only the card catalog, by author, under Donne, finding one book, The Satire Epigram & Verse Letters, ignoring all other sources.

A fifth example was done by Subject 28, a junior, male, Art Education major, who had received some instruction in use of a library, and was "researching are nouveau design in relation to its advancement in jewelry design." The subject consulted only the subject entry "art nouveau" in the card catalog, ignoring all other entries, as well as the Art Index.

Search successes. Relatively speaking, while there were numerous failures, there were also some "qualified" successes, as illustrated by the following five cases:

Subject 9, a junior, male, Political Science major, who had received "enough" library instruction in high school, was "researching a topic for Political Geography concerning air pollution across boudaries, specifically the legal aspects, especially regarding industrial pollution." He initiated his search by checking the card

catalog by subject for information on Air Pollution, and found three relevant citations. He proceeded next to consult the Air Pollution Abstracts and found several relevant citations, following which he left the library.

Subject 11, a senior, male, Psychology major, who had received two hours of insturction in library use in high school was researching "physiological basis for alcohol addition leading to a physiological basis for treatment of alcoholism with Metronidazole." He made a number of comments about Metronidazole, and the topic, and indicated that about eight hours of research had already been done, primarily with the Psychological Abstracts. He continued with the Psychological Abstracts, proceeded to check Biological Abstracts, then to search for cited journals during the remainder of the evening, and to make copies of relevant articles.

Subject 21, a freshman, female, Psychology major, who had received "very limited" instruction in library use in high school, was researching "dreams during sleep." The Subject indicated that several hours had already been spent using Psychological Abstracts, while on this particular occasion she began by consulting Science Citation Index, using the relevant articles previously uncovered, and continued by searching for cited articles.

Subject 29, a freshman, female, English major, who had received "very little" instruction in library use in high school, was searching for a "general idea of the meaning of chivalry -- history of it, examples, etc., for an English paper based on the decline of the modern myth of chivalry." She began by consulting the card catalog

under the subject entry "chivalry" for a "general idea of chivalry," and found one work, The Age of Chivalry, which she retreived from the stacks. Next she proceeded to Webster's Third International Dictionary for a detailed definition, following which she consulted the Encyclopedia Britannica, for a more general treatment. Then the Subject returned to the card catalog to find additional books.

Subject 32, a sophomore, female, Psychology major, who had received "very little" instruction in library use as a sophomore in high school, was searching for "methods of various psychological fields in studying how children are affected by birth order, frustrating experiences, guilt, etc., so that I can write a paper explaining how to study the particular problem of a handicapped child's affect on his siblings." The Subject consulted the Psychological Abstracts, using as descriptors "family relations," "sibling." She later consulted the Reader's Guide under "Sibling," and "Child Study," and the card catalog.

Ratings. Responses of the subjects were rated on the basis of the six scales. The results of those ratings, academic major, research topic, and whether or not library instruction had been received, for each Subject, are presented in Table 3.

Insert Table 3 about here

Results of those ratings were analyzed using the Chi Square test for each single rating scale, as noted in Table 4. The only statistically significant results were for the variable rating of search beginning, Rating D ($p < .01$).

Insert Table 4 about here

In consideration of the relationship between Library Instruction -- such as that received by the Subjects -- and the six rated variables, Chi Square tests revealed no statistically significant results ($p > .05$), indicating that whether or not subjects had received instruction in use of a library did not statistically affect their performance as rated by the present study.

Presented in Table 5 are the results of Chi Square tests performed on the interaction and the relationship between pairs of variables. Six of the 15 tests were statistically significant, indicating a relationship in performance on those related scales, i.e. how subjects performed on one rating was related to how they performed on a second rating. Those pairs of variables which showed a relationship resulting from the Chi Square were: understanding-precision, understanding-generality, precision-generality, understanding-logic, beginning-fruitfulness, and logic-fruitfulness.

Insert Table 5 about here

Contingency coefficients, showing the degree of correlation between two variables, were computed on pairs of ratings, as reported in Table 6. The highestdegree of correlation was found between the logic and fruitfulness scales.

Insert Table 6 about here

Discussion

The present study, as a preliminary investigation, gathered a sampling of data on a small number of students at Bucknell University, testing a research instrument for investigation of "information-seeking behavior."

The Chi Square test indicates whether a distribution of responses represents a normally distributed sample. When the level of significance is reached ($p < .05$), the indication is that statistically, the sample represents a non-normal distribution, and that the results of the test differ sufficiently from chance to infer that the variable as measured was important. It was necessary in several cases to group data for use with the Chi Square test, in order to minimize statistical inaccuracy due to the small sample size.

The Contingency Coefficient is a non-parametric correlation which attempts to show a relationship between values reported on pairs of variables. The indication in a highly correlated pair of variables (close to + 1.0, or - 1.0) is that a Subject scoring highly on one rating will tend to score highly on the matched variable; and vice versa, a low rating on one scale is generally accompanied by a low rating on the second scale.

A number of conclusions were drawn from the information gathered in this preliminary study.

(a) In general, students seem poorly skilled in use of a college library.

(b) Students seem not to have received sufficient instruction to significantly improve their use of a library over those students who have not received instruction in use of a library.

(c) Students at Bucknell, using the card catalog, tend to search most frequently by subject -- a trend conflicting with the findings of Tagliacozzo and Kochen (1970), and Lipetz (1972).

(d) Students seem to be unskilled in translating their questions into terms compatible with the library system. This was most obvious in the failure of Subjects to check appropriate entries in the card catalog. It was also confirmed by ratings of Subjects on the "precision" and "generality" scales.

(e) Students frequently fail to consult appropriate, key bibliographic and information sources -- 56% of the Subjects failed to consult the primary periodical source covering their topic -- as noted in Table 2, and as evidenced in the failure to find statistically significant Chi Square results on the "fruitfulness" variable.

(f) Logical progression and systematic approaches to checking sources of information often appeared to be absent. Subjects frequently skipped from source to source, wandered aimlessly, or made no progress, in the process of their search. The lack of logical progression in any significant number of Subjects is supported by the lack of significance in the Chi Square test on the "logic" variable.

(g) The conception of research on the part of many Subjects appeared to be limited and unsophisticated -- often involving little more than finding a book and checking it out of the library.

There were a number of limitations to data generated by the present study which limit the generalizability of that data. The

sample was small. In terms of academic major of the Subjects, the sample was skewed. There were not a sufficient number of responses and there was not adequate detail of information in many cases, to thoroughly evaluate trends in "research logic" or "search strategies" of the Subjects.

There were a number of limitations uncovered during the study, in the instrument itself. The use of four discrete illustrations on the Sample Log Entries page, which was done to avoid suggesting patterns or steps to Subjects, was apparently confusing to some. The section in the Log entitled "Searching for What?" was confusing to several Subjects, and not used by several other Subjects. In any future applications of the instrument, this section should be reworded to read: "Looking up what words or terms?" The section of the Log entitled "Physical Movements" was not used by a number of Subjects. A more effective format might be the inclusion of a map (library floor plan) allowing the Subject to sequentially number on the map each place he/she stops, and then to identify each location noting what was done at that point. A revised Log is presented in Figure 4.

Insert Figure 4 about here

Time limitations were also a critical factor. While each Subject had a minimum of 2½ hours of library time available--distribution of the instrument was discontinued 2½ hours prior to library closing time--many Subjects had not progressed very far with their search,

some had departed early from the library, and others had turned to other work. It might have been more advantageous to have continued the study--although this would have caused an additional methodological problem of lack of control--by allowing each Subject to retain the Questionnaire and Log until the search was completed.

The rating scales need to be re-examined, and further evaluated. Possibly the three ratings used to assess statement of the topic might be combined into one or two rating scales. While seemingly separate variables, there was a high degree of relationship between Subjects' performance on the "logic" and "fruitfulness" ratings.

A large proportion of the Subjects (8) were psychology majors. Most of them were rated highly. It is peculiar to the social sciences and humanities, that psychology is the only discipline where there is and has been for some time one single bibliographic tool--Psychological Abstracts--which serves to abstract and index the vast bulk of available literature in the discipline. This, in addition to the fact that many psychology faculty--at Bucknell at least--stress to their students familiarity with Psychological Abstracts, may account for the bias in the sample, both in terms of heavy use, and of high ratings.

One of the most glaring and puzzling results of the present study was the failure of Subjects to request assistance. Swope and Katzer (1972) have addressed this question, and suggested some answers, but the problem remains.

Once more information has been gathered, analysis may be attempted and suggestions offered concerning the three goal areas noted earlier, however, the present study does not contain sufficient information to attempt to provide answers to those problems.

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FIGURE 1

Sample Directions and Questionnaire

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This is a survey to determine which of the Bertrand Library's resources are used most heavily by students who are doing research.

Please complete the following QUESTIONNAIRE and the attached LOG. It is important that you be as detailed as possible in your answers, especially in the LOG where you are asked to note everything you have done in the process of your research today, regardless of whether a particular step was useful in providing information or not. Please use as many of the pages of the LOG as necessary, and feel free to add additional pages.

Please return this QUESTIONNAIRE and LOG to the surveyor, either when you have completed your research today, or as you leave the library; however, do not leave the library without returning these materials. If you wish to use the LOG as a record of your research, please feel free to make photocopies of your work before turning it in today.

For those who are interested, the results of this survey will be released at a later date. If you have any questions please do not hesitate to ask.

Thank you for your assistance in this project.

Jeffrey Reed

QUESTIONNAIRE

1. Class: Freshman___; Sophomore___; Junior___; Senior___; Grad. Student___.

2. Major: _____. 3. Sex: Female___; Male___.

4. Have you ever had any INSTRUCTION in LIBRARY USE? Yes___; No___.

   When? _____. How much? _____.

5. Research Question: In your own words, being as specific, as precise, and as detailed as possible, please describe the problem on which you are doing research today.

6. Prior Research: Have you already done research on this problem? Yes___; No___.

   On a related problem? Yes___; No___. If yes, what was the problem?

   If yes, how recently was the research done, and how much time spent?

7. Comments: Have you given this problem much thought, or are you just beginning? If you have given the problem some thought, please indicate some of your ideas, comments, conclusions about the topic.

FIGURE 2

LOG of Research Activities

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LOG -- Library Survey -- Jeffrey G. Reed

Please keep the following LOG of your work done in researching the problem stated in # 5 of the attached QUESTIONNAIRE. Please complete each section of the LOG for each step you take in your research (whether the step is helpful or not), being as specific and detailed as possible. (Note SAMPLE LOG ENTRIES.)

PHYSICAL MOVEMENTS. Trace movements from place to place.	SOURCE CONSULTED. Please list the book, catalog, etc. checked.	SEARCHING FOR WHAT?	INFORMATION FOUND. Please note what you found in this location. (List at least one, but not more than five references for each.)	INFORMATION IS USEFUL ? YES	NO

FIGURE 3

Sample LOG Entries

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LOG -- Library Survey -- Jeffrey O. Reed

Please keep the following LOG of your work done in researching the problem stated in # 5 of the attached QUESTIONNAIRE. Please complete each section of the LOG for each step you take in your research (whether the step is helpful or not), being as specific and detailed as possible. (Note SAMPLE LOG)

PHYSICAL MOVEMENTS. Trace movements from place to place.	SOURCE CONSULTED. Please list the book, catalog, etc. checked.	SEARCHING FOR WHAT?	INFORMATION FOUND. Please note what you found in this location. (List at least one, but not more than five references)	INFORMATION IS USEFUL YES	INFORMATION IS USEFUL NO
	Sample	**Log**	**Entries**		
Lobby	Card Catalog - Subjects Drawer #62 " #63	Child Psychology Child Study	Referred to: Child Study Carmichael, L. - Carmichael's manual of Child Psych. BF 721 .C213	✓	
Reference Room	Psychological Abstracts, Vol. 46	Memory	V.46; #311. Shapiro. Commonality of subjective organization in free recall. Psychonomic Science, 1970, 21(2), 81-83		✓
Book Stacks	Book by Nelson, L: Cuba. "notes" F1788 .N42	Book cited, by Suchlicki	Suchlicki. University Students and Revolution in Cuba, 1920-68 LA 488.7 .S9	✓	
Lobby	Card Catalog - Authors	Darwin, C. Origin of the Species	found number: QH 365 .069	✓	
	Sample	**Log**	**Entries**		

30

30

FIGURE 4

Revised LOG of Research Activities

LOG OF RESEARCH ACTIVITIES (revised) -- Library Survey

Please complete this record of your work done in researching the topic noted in #5 of the QUESTIONNAIRE. On the Library Floor Plan, sequentially number (1, 2, ...) each place you stop to do some work or checking, then for each stop, identify in the LOG report exactly what you did, being as detailed as possible. (Note Sample Log.)

[redacted]

L I B R A R Y F L O O R P L A N

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Stop Number	SOURCE CONSULTED (book, catalog, index, journal, bibliography, ...?)	Looking up what word(s), term(s)?	INFORMATION FOUND (Give relevant information, e.g. author, title, journal title, etc., of book, journal, newspaper, record, etc. found.)

Table 1

Sources Consulted by Students

Source	Frequency
Card Catalog -- Subjects	18
Card Catalog -- Authors/Titles	5
Card Catalog (section unknown)	2
Psychological Abstracts	7
Reader's Guide to Periodical Literature	6
Direct reference to periodical article (no bibliographic source used)	5
Public Affairs Information Service Bulletin	3
Reserved Book Section of Library	3
Journal of Economic Literature	2
Abstracts of North American Geology	1
Air Pollution Abstracts	1
Biological Abstracts	1
Business Periodicals Index	1
Dictionary	1
Education Index	1
Encyclopedia	1
Modern Language Association Bibliography	1
Science Citation Index	1

Table 2

Available Relevant Bibliographic Sources Not Consulted By Any Subjects

Abstracts of English Studies
Art Index
Annual Bibliography of English Language & Literature
Applied Science & Technology Index
Bibliography Index
Education Index
Engineering Index
E.R.I.C. Indexes
Essay & General Literature Index
International Bibliography of Social Sciences:
Economics
Political Science
Index Medicus
Index to Religious Periodical Literature
Language & Language Behavior Abstracts
Mental Retardation Abstracts
Monthly Catalog of U.S. Government Publication
New York Times Index
Pollution Abstracts
Poverty & Human Resources Abstracts
Social Sciences & Humanities Index

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Table 6

Contingency Coefficients for 2 Variable Interactions

		Rating					
		A	B	C	D	E	F
Rating	A		.58*	.58*	.51	.60*	.52
	B			.54*	.51	.45	.38
	C				.41	.49	.33
	D					.42	.51*
	E						.64*
	F						

Level of Significance:

* $p < .05$